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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,377	11/21/2003	Thomas Jefferson Awad	OCTASIC-001	3600

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FETHERSTONHAUGH - SMART & BIGGAR  
1000 DE LA GAUCHETIERE WEST  
SUITE 3300  
MONTREAL, QC H3B 4W5  
CANADA

EXAMINER
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LE, DANH C

ART UNIT	PAPER NUMBER
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2617

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/719,377

Applicant(s)

AWAD ET AL.

Examiner

DANH C. LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-13, 22-24 and 42 is/are rejected.
- 7) ☒ Claim(s) 5-9, 14-21 and 26-32 is/are objected to.
- 8) ☒ Claim(s) 33-41 and 43-48 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/11/05, 3/12/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 4/11/05 and 3/12/04 have been considered by the examiner and made of record in the application file.

***Election/Restrictions***

2. Applicant's election with traverse of 1-32, 41 in the reply filed on 5/3/06 is acknowledged. The traversal is on the ground(s) that the Examiner fails to establish that a search of entire application constitutes an undue

Burden. This is not found persuasive because there are two distinct inventions. Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 1, 10, 22, 41, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

***SET I***

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**4. Claims 1, 10, 22, 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosoi (US 6,097,971).**

As to claim 1, Hosoi teaches a method suitable for use in reducing echo in a communication system (Hosoi, figures 4, 5 and their descriptions), said method comprising:

- a) receiving a first signal including a voice component, the voice component being associated to a speaker;
- b) receiving a second signal including an echo component, the echo component being correlated to the first signal;
- c) processing said first signal to derive an estimate of a harmonic feature of the voice component;
- d) processing said second signal at least in part on the basis of the harmonic component of the voice component to remove at least in part the echo component such as to derive an echo reduced signal;
- e) releasing the echo reduced signal.

As to claim 10, the claim is an apparatus claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 22, the claim is a software program claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 42, the limitation of the claim is the same limitation of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**5. Claims 2-4, 11-13, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi in view of Li (US 2003/0138061).**

As to claim 2, Hosoi teaches a method as defined in claim 1, Hosoi fails further teach the harmonic feature of the voice component is an estimate of the pitch associated to the voice component. Li teaches voice component is an estimate of the pitch associated to the voice component (paragraph 197). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Li into the system of Hosoi in order to excite during the good voice frames.

As to claim 3, the combination of Hosoi and Li teach the method as defined in claim 2, said method comprising applying a filtering operation to the second signal at least in part on the basis of the estimate of the pitch associated to the voice component to derive the echo reduced signal (Hosoi, figures 4, 5 and their descriptions).

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As to claim 4, the combination of Hosoi and Li teaches the method as defined in claim 2, wherein the voice component is a first voice component, said second signal including a second voice component, the second voice component being associated to a second speaker (Hosoi, figures 4, 5 and their descriptions).

As to claim 11, the claim is an apparatus claim of claim 2; therefore, the claim is interpreted and rejected as set forth as claim 2.

As to claim 12, the claim is an apparatus claim of claim 3; therefore, the claim is interpreted and rejected as set forth as claim 3.

As to claim 13, the claim is an apparatus claim of claim 4; therefore, the claim is interpreted and rejected as set forth as claim 4.

As to claim 23, the claim is a software program claim of claim 2; therefore, the claim is interpreted and rejected as set forth as claim 2.

As to claim 24, the claim is a software program claim of claim 3; therefore, the claim is interpreted and rejected as set forth as claim 3.

As to claim 25, the claim is a software program claim of claim 4; therefore, the claim is interpreted and rejected as set forth as claim 4.

## ***SET II***

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**6. Claims 1, 10, 22, 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Park (US 6,181,794).**

As to claim 1, Park teaches a method suitable for use in reducing echo in a communication system (Park, figure 1 and its description), said method comprising:

- a) receiving a first signal including a voice component, the voice component being associated to a speaker;
- b) receiving a second signal including an echo component, the echo component being correlated to the first signal;
- c) processing said first signal to derive an estimate of a harmonic feature of the voice component;
- d) processing said second signal at least in part on the basis of the harmonic component of the voice component to remove at least in part the echo component such as to derive an echo reduced signal;
- e) releasing the echo reduced signal.

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As to claim 10, the claim is an apparatus claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 22, the claim is a software program claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 42, the limitation of the claim is the same limitation of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

### ***SET III***

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1, 10, 22, 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Katayama (US 6,704,415).**

As to claim 1, Katayama teaches a method suitable for use in reducing echo in a communication system (Katayama, figure 1 and its description), said method comprising:

a) receiving a first signal including a voice component, the voice component being associated to a speaker;



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b) receiving a second signal including an echo component, the echo component being correlated to the first signal;

c) processing said first signal to derive an estimate of a harmonic feature of the voice component;

d) processing said second signal at least in part on the basis of the harmonic component of the voice component to remove at least in part the echo component such as to derive an echo reduced signal;

e) releasing the echo reduced signal.

As to claim 10, the claim is an apparatus claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 22, the claim is a software program claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 42, the limitation of the claim is the same limitation of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

#### **SET IV**

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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**8. Claims 1, 10, 22, 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Benyassine (US 6,804,203).**

As to claim 1, Benyassine teaches a method suitable for use in reducing echo in a communication system (Benyassine, figure 1 and its description), said method comprising:

- a) receiving a first signal including a voice component, the voice component being associated to a speaker;
- b) receiving a second signal including an echo component, the echo component being correlated to the first signal;
- c) processing said first signal to derive an estimate of a harmonic feature of the voice component;
- d) processing said second signal at least in part on the basis of the harmonic component of the voice component to remove at least in part the echo component such as to derive an echo reduced signal;
- e) releasing the echo reduced signal.

As to claim 10, the claim is an apparatus claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 22, the claim is a software program claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 42, the limitation of the claim is the same limitation of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

**SET V**

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**9. Claims 1, 10, 22, 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Osovet (US 6,442,272).**

As to claim 1, Osovet teaches a method suitable for use in reducing echo in a communication system (Osovet, figure 1 and its description), said method comprising:

- a) receiving a first signal including a voice component, the voice component being associated to a speaker;
- b) receiving a second signal including an echo component, the echo component being correlated to the first signal;
- c) processing said first signal to derive an estimate of a harmonic feature of the voice component;
- d) processing said second signal at least in part on the basis of the harmonic component of the voice component to remove at least in part the echo component such as to derive an echo reduced signal;
- e) releasing the echo reduced signal.

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As to claim 10, the claim is an apparatus claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 22, the claim is a software program claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 42, the limitation of the claim is the same limitation of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

### ***Allowable Subject Matter***

Claims 5-9, 14-21, 26-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 5, 14, 26, the teaching of above prior arts above either alone or in combination fails to **further comprising:**

- i. generating a set of filter coefficients at least in part on the basis of the estimate of the pitch associated to the first voice component;
- ii. applying a filtering operation to the second signal on the basis of the set of filter coefficients generated in i. to derive the echo reduced signal.

Dependent claims 6-9, 15-21, 27-32 are objectable for the same reason.

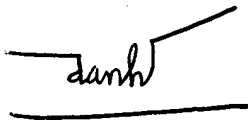
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C. LE whose telephone number is 571-272-7868. The examiner can normally be reached on 8:00AM-5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "danh", is written over a horizontal line.

July 2, 2006

DANH CONG LE  
PRIMARY EXAMINER